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ENGINE

Engineering curricula modernization in
renewable energy in Albanian Universities

PLATFORM USER MANUAL



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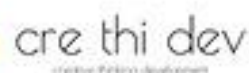
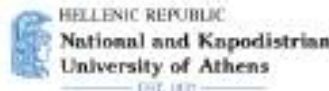
Moodle Environment

Moodle, an acronym for "Modular Object-Oriented Dynamic Learning Environment," is a versatile and powerful open-source learning management system (LMS) that revolutionizes the way education is delivered and experienced. This description provides an insight into Moodle's significance, features, and impact on modern education.

Moodle stands as a beacon of innovation in the realm of online education. It is a dynamic platform that facilitates the creation, delivery, and management of courses, fostering engaging learning experiences for students and streamlined administrative processes for educators.

Key Features:

- **Course Management:** Moodle offers a structured environment for organizing and presenting course materials. Instructors can create content-rich courses by adding resources like documents, videos, and interactive elements.
- **Interactive Activities:** The platform supports a range of interactive activities, including quizzes, forums, assignments, and wikis. These tools encourage collaboration, critical thinking, and engagement among learners.
- **User Interaction:** Moodle promotes communication and collaboration between students, instructors, and peers. Discussion forums, messaging, and chat features facilitate ongoing conversations and knowledge sharing.
- **Assessment and Grading:** Instructors can design assessments, quizzes, and assignments with customizable grading criteria. Moodle's gradebook automates the grading process and provides valuable insights into student performance.
- **Personalized Learning:** With customizable profiles and preferences, learners can tailor their Moodle experience to match their learning preferences. The platform adapts to individual needs, ensuring a personalized educational journey.



- **Multimedia Integration:** Moodle accommodates multimedia content seamlessly. From embedding videos and audio clips to interactive simulations, educators can enhance learning with rich media.
- **Mobile Compatibility:** Moodle's responsive design ensures a consistent experience across devices. The Moodle app enables learners to access courses, resources, and activities on smartphones and tablets.
- **Data Analytics:** Moodle provides insights into learner progress, engagement, and course effectiveness through analytics and reporting tools. This data empowers instructors to make data-driven decisions.

Accessing the courses

Accessing your courses in Moodle is the first step toward embarking on your online learning journey. This guide will walk you through the process of locating and entering your courses so you can explore course materials, interact with fellow learners, and engage with the content.

Instructions:

- **Logging In:**

Open your web browser and navigate to your institution's Moodle site.

Enter your username and password in the provided fields.

Click the "Login" button to access your Moodle account.

- **Dashboard Overview:**

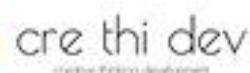
Upon logging in, you'll be greeted by your Moodle dashboard.

The dashboard serves as a central hub for your courses, notifications, and upcoming events.

- **Course Tiles:**

On the dashboard, you'll see tiles representing the courses you're enrolled in.

Each tile displays the course name, instructor, and possibly a course image.



- **Selecting a Course:**

Click on the tile of the course you wish to access.

You'll be directed to the main page of that course.

- **Course Page Layout:**

The course page is organized into sections or topics, each containing course materials and activities.

The layout may vary depending on how the instructor has structured the course.

- **Navigation Menu:**

On the left side of the course page, you'll find the navigation menu.

This menu provides access to various components of the course, including resources, activities, forums, and more.

- **Accessing Content:**

Explore the course content by clicking on the sections or topics within the navigation menu.

Each section may contain readings, videos, assignments, quizzes, and interactive elements.

Editing Mode

Moodle's Edit Mode is a powerful tool that allows instructors to create, modify, and organize course content. By enabling Edit Mode, educators can customize their courses, add resources, and design interactive activities to enhance the learning experience.

Edit Mode serves as a bridge between instructors and the course design process. It transforms the course page into an editable canvas, empowering educators to shape the learning environment according to their pedagogical goals and teaching style.

Functionality:

- **Accessing Edit Mode:**

Edit Mode can be accessed by clicking the "Turn editing on" button, usually located at the top-right corner of the course page.

Once enabled, the course page transforms, revealing editing options and tools.



- **Adding Resources:**

In Edit Mode, educators can add various resources to course sections or topics.

Examples of resources include files, documents, videos, links to external websites, and interactive content.

- **Creating Activities:**

Edit Mode allows instructors to incorporate interactive activities to engage learners.

Examples include creating quizzes, assignments, forums, wikis, and surveys.

- **Rearranging Content:**

Instructors can easily rearrange course elements by dragging and dropping them within sections.

This feature ensures that course content is organized logically.

- **Editing Content:**

Edit Mode enables instructors to edit existing content and resources directly on the course page.

Changes made are immediately visible to students.

- **Setting Deadlines and Parameters:**

For activities like assignments and quizzes, instructors can set deadlines and configure grading parameters.

This feature promotes structured course progression.

- **Customizing Sections:**

Instructors can personalize the appearance of course sections, including titles and descriptions.

This customization adds clarity and context to the content.

Examples:

- **Adding a Document:**

In Edit Mode, an instructor can upload a PDF document related to the current topic.

Students will find the document as a downloadable resource in the designated section.



- **Creating a Discussion Forum:**

By enabling Edit Mode, an instructor can add a discussion forum where students can exchange ideas.

Students can post their thoughts, respond to peers, and engage in meaningful conversations.

- **Embedding a Video:**

In Edit Mode, an instructor can embed an educational video from a platform like YouTube.

This video becomes part of the course content, enhancing visual learning.

Edit Mode empowers instructors to shape their courses dynamically, fostering engagement and interaction. By adding resources, activities, and personalizing sections, educators create a rich learning environment tailored to their teaching objectives. Edit Mode's flexibility and immediacy facilitate a dynamic and evolving online classroom that promotes effective learning.

Adding a Resource

Moodle's resource feature allows instructors to share a wide array of content, from documents and multimedia to external links and interactive materials. Adding resources enhances course engagement by providing students with diverse learning materials tailored to different learning styles.

Instructions:

- **Accessing Edit Mode:**

Before adding resources, enable Edit Mode by clicking the "Turn editing on" button in the upper-right corner of the course page.

- **Choosing a Section:**

Navigate to the section or topic where you want to add a resource.

Click the "Add an activity or resource" link within the section.

- **Selecting a Resource:**

In the activity chooser, select the type of resource you want to add (e.g., File, URL, Page, Book, etc.).



- **Configuring Resource Settings:**

Provide a suitable name and description for the resource to guide students.

Customize display options (e.g., inline, separate window) to optimize how the resource is presented.

- **Uploading Files:**

If you're adding a file resource, click the "Add" button next to "Content."

Upload files from your computer or cloud storage. These files can be documents (PDFs, Word files), images, or presentations.

- **Embedding Media:**

For multimedia resources, such as videos or audio, you can embed them directly within your course page.

Use the appropriate embedding code provided by the media platform (e.g., YouTube, Vimeo).

- **Linking to External Content:**

If the resource exists online, you can add a URL resource.

Paste the URL and provide a name for the link.

- **Creating Pages or Books:**

Use the Page or Book resource type to create interactive content directly within Moodle.

Add text, images, videos, and interactive elements to engage students.

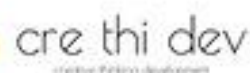
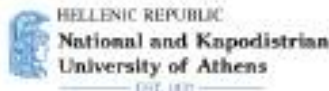
Examples:

- **PDF Document Resource:**

Upload a PDF of a research paper as a resource for students to read and analyze.

- **Video Tutorial Resource:**

Embed a YouTube video tutorial related to the course topic for visual and auditory learning.



- **Webpage Resource:**

Link to an external webpage containing supplementary material, such as an online encyclopedia entry or a relevant news article.

- **Interactive eBook Resource:**

Create an interactive eBook using the Book resource, combining text, images, and quizzes to engage learners.

Adding resources to your Moodle course empowers you to curate a dynamic learning environment. By incorporating diverse content types such as documents, multimedia, and interactive materials, you cater to different learning preferences and create a comprehensive educational experience. Experiment with various resource types to make your course engaging, informative, and aligned with your teaching goals.

Selecting File Resource

The file resource in Moodle allows you to upload files of various formats directly into your course. This versatile feature enables educators to provide students with access to important course materials, ensuring seamless sharing and engagement.

Instructions:

- **Accessing Edit Mode:**

Before adding a file resource, activate Edit Mode by clicking the "Turn editing on" button on the course page.

- **Choosing a Section:**

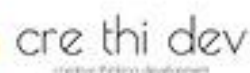
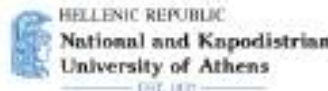
Navigate to the course section or topic where you want to add the file resource.

Click the "Add an activity or resource" link within the section.

- **Selecting File Resource:**

In the activity chooser, choose "File" as the type of resource you want to add.

- **Configuring File Settings:**



Provide a clear and informative name for the file resource to guide students.

Add a description if needed, offering context for the uploaded file.

- **Uploading Files:**

Click the "Add" button next to the "Content" field to upload files.

Use the file picker to upload files from your computer or other storage platforms.

- **Selecting Display Options:**

Choose how you want the file to be displayed to students.

"Automatic" lets Moodle determine how to display the file, while "Force download" ensures students download the file.

- **Restricting Access (Optional):**

If desired, set access restrictions based on date, completion of other activities, or grade requirements.

Saving and Displaying:

Once settings are configured, click the "Save and return to course" button to add the file resource to the course section.

Examples:

- **Lecture Slides (PDF):**

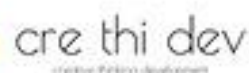
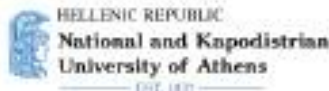
Upload PDF slides from your lecture presentation, allowing students to review key concepts and take notes.

- **Image Resources:**

Provide visual aids by uploading images related to the course content, such as diagrams, charts, and infographics.

- **Audio Clips (MP3):**

Share audio recordings of lectures, discussions, or interviews, enabling auditory learners to engage with the content.



- **Presentation Files (PowerPoint):**

Upload PowerPoint presentations enriched with multimedia elements to supplement your teaching materials.

Configuring Display Options

Configuring display options in Moodle allows instructors to tailor how course materials are presented to students, optimizing the learning experience. By selecting the right display settings, educators can ensure that content is visually engaging, accessible, and aligned with pedagogical goals. For instance, when adding a PDF resource, instructors can choose to display it "inline," allowing students to view the document directly on the page, or "separate window," which opens the PDF in a new window for focused reading. Similarly, embedding videos "inline" within a course page enables immediate access to visual content, while choosing "open" in a "new window" option provides an uncluttered viewing experience. These display options empower educators to create a dynamic and user-friendly environment that enhances student engagement and understanding.

Examples:

- **PDF Document Resource:**

Display Option: Inline

Example: When uploading a lecture slide PDF, selecting "Inline" will allow students to view the slides directly on the course page, enabling quick reference and note-taking without leaving the page.

- **Video Tutorial Resource:**

Display Option: Open in New Window

Example: Embedding a YouTube video tutorial using "Open in New Window" ensures that the video plays in a separate window, providing an uncluttered environment for focused learning.

- **Webpage Resource:**

Display Option: Embed

Example: Embedding an external webpage containing an interactive simulation using "Embed" allows students to interact with the content directly within the Moodle course page.



- **Presentation File (PowerPoint):**

Display Option: Force Download

Example: When sharing a PowerPoint presentation, selecting "Force Download" ensures that students download the presentation file instead of viewing it in the browser, preserving formatting and animations.

- **Audio Clip (MP3):**

Display Option: Open in New Window

Example: Embedding an audio clip using "Open in New Window" ensures a distraction-free environment for listening to the audio content, enhancing auditory learning.

- **Interactive eBook (Book Resource):**

Display Option: Navigation Block

Example: When creating an interactive eBook using the Book resource, adding a "Navigation Block" in the display options provides students with easy access to different chapters and sections.

- **Image Resources:**

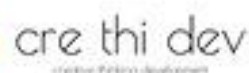
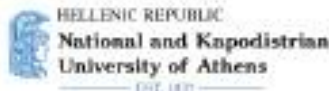
Display Option: Inline

Example: Displaying images "Inline" within course content allows students to immediately see diagrams, charts, or visual aids without needing to click on separate links.

By carefully selecting the appropriate display options for different types of resources, instructors can optimize the way students interact with the content, catering to various learning preferences and promoting an engaging and effective learning experience.

Saving and Displaying

After configuring your course resources, it's time to save your settings and make them visible to your students. Moodle's user-friendly interface ensures that your efforts in designing a dynamic learning experience culminate in content that's both accessible and interactive.



Instructions:

- **Configuring Resources:**

Customize your resource's name, description, and display options to suit your teaching objectives.

- **Adding Content:**

Depending on the resource type, upload files, embed multimedia, or provide external URLs to enhance course materials.

- **Accessing Edit Mode:**

Click the "Turn editing on" button at the top-right corner of the course page to enable Edit Mode.

- **Choosing a Section:**

Navigate to the course section where you've configured the resource.

- **Saving Settings:**

Scroll to the bottom of the resource configuration page and click the "Save and return to course" button.

- **Displaying Content:**

Your resource will now be visible to students within the designated course section.

Examples:

- **Interactive Video Lecture:**

After configuring display options and content within a "Page" resource, saving and displaying it will transform your prepared video lecture into an interactive learning module.

- **PDF Lecture Notes:**

By saving and displaying a "File" resource with your PDF lecture notes, students can easily access and review the materials right from the course page.



- **External Article Link:**

When you save and display a "URL" resource that leads to an external article, students can directly access the informative content without leaving Moodle.

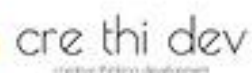
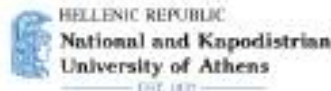
- **Embedded Quiz:**

After setting up a quiz within a "Quiz" activity, saving and displaying it makes the quiz available for students to attempt and submit their answers.

- **Collaborative Wiki:**

When saving and displaying a "Wiki" resource, students can contribute and collaborate on a shared knowledge-building platform directly within Moodle.

Saving and displaying content in Moodle is the culmination of your effort to create engaging and informative course materials. By following the steps to save your configured resources, you ensure that students can access and interact with the content seamlessly. Examples showcase the diverse ways in which various resource types can come to life within the Moodle environment, fostering a rich and dynamic learning experience for students.



Gamification Tools

Instructions for installing plugins in Moodle

Gamification is a powerful technique to enhance user engagement and motivation in online learning environments. Moodle, being a popular learning management system (LMS), offers several plugins and features that allow you to incorporate gamification elements into your courses. Let's get started:

- **Step 1: Install the Gamification Plugins**

1. Moodle has various gamification plugins available. One popular option is the "Level Up!" plugin. To install it, follow these steps:
2. Log in to your Moodle site as an administrator.
3. Navigate to the Moodle plugins directory (<https://moodle.org/plugins/>).
4. Search for the "Level Up!" plugin and click on it.
5. Review the plugin details and compatibility information.
6. Download the plugin package compatible with your Moodle version.
7. Extract the plugin package.
8. Upload the plugin files to the appropriate directory on your Moodle server (e.g., `yourmoodlesite/mod/`).
9. Log in to your Moodle site as an administrator again and go to "Site administration."
10. Click on "Notifications" to complete the plugin installation.

- **Step 2: Configure the Gamification Plugin**

1. Once the "Level Up!" plugin is installed, you need to configure it according to your requirements. Here's how:
2. Log in to your Moodle site as an administrator.
3. Navigate to "Site administration" and click on "Plugins."
4. Select "Activity modules" and then click on "Level Up!."
5. Configure various settings, such as point systems, level criteria, badges, and rewards.
6. Customize the appearance and behavior of the gamification elements to align with your course design and objectives.
7. Save the changes.



- **Step 3: Define Gamification Elements for Courses**

1. Now that you have configured the gamification plugin, you can start adding gamification elements to your courses. Here's how:
2. Log in to your Moodle site as a course creator or administrator.
3. Navigate to the course in which you want to add gamification elements.
4. Turn editing on by clicking on the "Edit" button.
5. Add the desired activities and resources to your course.
6. For each activity or resource, scroll down to the "Activity completion" section.
7. Enable activity completion for that specific item by checking the box.
8. Choose the completion criteria that students need to fulfill to earn points or badges.
9. Set up point values, badges, and rewards associated with the completion of each activity.
10. Repeat steps 4-8 for all the activities and resources you want to include in your gamified course.
11. Save the changes.

- **Step 4: Monitor and Review Gamification Progress**

1. Once you have implemented gamification elements in your Moodle course, it's essential to monitor and review the progress of your learners. Moodle provides various reports and analytics tools to help you with this. Here's what you can do:
2. Log in to your Moodle site as a course creator or administrator.
3. Navigate to the course that includes the gamification elements.
4. Access the course administration panel.
5. Explore the available reports, such as the "Course completion" report or "Activity completion" report, to see students' progress.
6. Analyze the data to identify areas where learners are excelling or struggling.
7. Use this information to adjust and refine your gamification elements to better engage and motivate your students.

Congratulations! You have successfully set up gamification elements in Moodle using the "Level Up!" plugin and configured them for your course. By incorporating gamification, you can enhance student engagement, motivation, and learning outcomes in your Moodle courses. Enjoy exploring the possibilities and creating a more engaging learning experience for your students!



How to create badges in Moodle

- **Step 1: Access the Badge Creation Page**

1. Log in to your Moodle site as an administrator or a user with the necessary permissions to create badges.
2. Navigate to the course or site where you want to create the badge.
3. Access the course administration panel or site administration panel.

- **Step 2: Navigate to the Badges Settings**

1. In the course administration panel or site administration panel, locate the "Badges" option.
2. Click on "Badges" to access the badge management page.

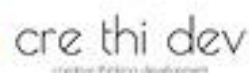
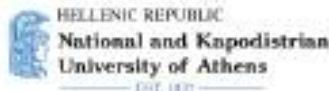
- **Step 3: Create a New Badge**

1. On the badge management page, click on the "Add a new badge" button.
2. Provide a name for the badge in the "Badge name" field. Choose a descriptive name that represents the purpose or achievement associated with the badge.
3. Enter a description for the badge in the "Badge description" field. This description will help learners understand the significance of earning the badge.
4. Configure the badge settings:
 - a. Issuer: Specify the entity or organization issuing the badge.
 - b. Duration: Choose whether the badge should be available for a specific duration or indefinitely.
 - c. Expiration: Set an expiration date for the badge if applicable.
 - d. Alignment: Align the badge with a specific framework or competency if desired.
5. Define the badge image:
 - a. Upload an image file for the badge by clicking on the "Choose a file" or "Browse" button.
 - b. Make sure the image represents the badge appropriately and is in a suitable format (e.g., PNG or JPEG).
 - c. Adjust the image dimensions as per the recommended size for badges in your Moodle site.
6. Configure the badge criteria:
 - a. Select the "Manual issue" option if you want to manually assign the badge to learners.



- b. Alternatively, choose from other options such as "Completion of a course," "Activity completion," or "Criteria-based on activities" to automatically award badges based on specific achievements or criteria.
 - c. Customize the criteria parameters according to your requirements.
 7. Set up the badge issuer details:
 - a. Enter the issuer's name, email, and URL in the respective fields.
 - b. Add any additional information related to the issuer if desired.
 8. Save the badge settings.
- **Step 4: Manage Badge Options (Optional)**
 1. After saving the badge settings, you can explore additional badge options.
 2. Click on the badge name from the badge management page to access the badge configuration page.
 3. On the badge configuration page, you can:
 - a. Edit the badge settings.
 - b. Add more criteria for issuing the badge.
 - c. Configure the badge appearance and visibility options.
 - d. Define message templates for issuing the badge.
 - e. Enable sharing options for badge earners.
 - f. Customize badge permissions.
 - g. Explore other advanced options available based on your Moodle version and installed plugins.
 4. Make any necessary adjustments or customizations to the badge options.
 5. Save the changes.

Congratulations! You have successfully created a badge in Moodle. Learners can now earn the badge based on the criteria you have defined. Badges can be a powerful tool to motivate and recognize learners' achievements, enhancing their engagement and progress in Moodle courses.



Example of a gamified course with badges

Let's see an example of a gamified course for an Electrical Engineering Fundamentals course. In this course, learners will earn different badges as they progress through various topics and demonstrate their understanding of electrical engineering concepts.

Course Overview: Course Name: Electrical Engineering Fundamentals Estimated Duration: 6 weeks
Gamification Element: Badges

Week 1: Introduction to Electrical Engineering

- Topic 1: What is Electrical Engineering?
- Topic 2: Fundamentals of Circuits
- Topic 3: Basic Electronics

Badge 1: Electrical Engineering Apprentice Description: Awarded to learners who complete all topics in Week 1 and pass the Week 1 quiz.

Week 2: Circuit Analysis and Components

- Topic 1: Circuit Laws and Analysis Techniques
- Topic 2: Passive Components and Circuit Building Blocks
- Topic 3: Active Components and Semiconductors

Badge 2: Circuit Analysis Pro Description: Awarded to learners who complete all topics in Week 2 and pass the Week 2 quiz.

Week 3: Power Systems and Energy Conversion

- Topic 1: Power Generation and Distribution
- Topic 2: Transformers and Power Electronics
- Topic 3: Electric Motors and Drives

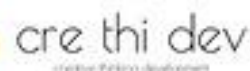
Badge 3: Power Systems Specialist Description: Awarded to learners who complete all topics in Week 3 and pass the Week 3 quiz.

Week 4: Electronics and Control Systems

- Topic 1: Analog and Digital Electronics
- Topic 2: Control Systems Basics
- Topic 3: Feedback Control and PID Controllers

Badge 4: Electronics and Control Expert Description: Awarded to learners who complete all topics in Week 4 and pass the Week 4 quiz.

Week 5: Communication and Signal Processing



- Topic 1: Communication Systems and Principles
- Topic 2: Signal Processing Techniques
- Topic 3: Digital Signal Processing

Badge 5: Communication and Signal Processing Guru Description: Awarded to learners who complete all topics in Week 5 and pass the Week 5 quiz.

Week 6: Microcontrollers and Embedded Systems

- Topic 1: Microcontroller Basics
- Topic 2: Embedded Systems Design
- Topic 3: Programming Microcontrollers

Badge 6: Microcontroller Master Description: Awarded to learners who complete all topics in Week 6 and pass the Week 6 quiz.

Final Badge: Electrical Engineering Pro Description: Awarded to learners who earn all six previous badges, actively participate in course discussions, and complete the final course project.

Grading and Progression:

- To earn each badge, learners must complete all the required topics in the respective week and achieve a passing score on the associated quiz.
- Learners can track their progress and view earned badges on their Moodle profile page.
- Each badge comes with a unique graphic representing the accomplishment, displayed on the learner's profile.

Engagement and Motivation:

- Learners are motivated to progress through the course and complete all topics to earn badges as recognition of their achievements.
- The leaderboard displays the top learners based on the number of badges earned, encouraging healthy competition among learners.
- Course discussions and collaborative activities offer additional opportunities for learners to interact and earn bonus points towards badges.

Badge Display and Sharing:

- Learners can showcase their earned badges on their LinkedIn profiles and share their accomplishments on social media.
- Badges serve as a visual representation of learners' expertise, enhancing their credibility within the electrical engineering community.



Remember that gamification elements should be thoughtfully integrated into the course design to reinforce learning outcomes and promote engagement. Badges can motivate learners to explore and master various electrical engineering concepts, making the learning experience more enjoyable and rewarding.

How to create H5P Quizzes in Moodle

- **Step 1: Install and Enable the H5P Plugin** – This step is usually done from the IT department but in case that it is not completed here is how you can proceed:
 1. Log in to your Moodle site as an administrator.
 2. Navigate to the Moodle plugins directory (https://moodle.org/plugins/mod_hvp).
 3. Review the plugin details and compatibility information.
 4. Download the plugin package compatible with your Moodle version.
 5. Extract the plugin package.
 6. Upload the plugin files to the appropriate directory on your Moodle server (e.g., **yourmoodlesite/mod/**).
 7. Log in to your Moodle site as an administrator again and go to "Site administration."
 8. Click on "Notifications" to complete the plugin installation.
 9. Enable the H5P plugin by navigating to "Site administration" -> "Plugins" -> "Activity modules" -> "Manage activities."
 10. Check the box next to "H5P" to enable the plugin.
 11. Save the changes.
- **Step 2: Create an H5P Activity**
 1. Log in to your Moodle site as a teacher or administrator.
 2. Navigate to the course where you want to create the H5P quiz.
 3. Turn editing on by clicking on the "Edit" button.
 4. Select the section or topic where you want to add the H5P quiz.
 5. Click on the "Add an activity or resource" link within the section.
 6. In the activity chooser, select "H5P Interactive Content" and click on the "Add" button.

7. Configure the H5P activity:

- a. Enter a name for the activity in the "Name" field.
- b. Choose the content type as "Quiz" from the H5P content type dropdown.
- c. Set other desired options such as display options and time limits.
- d. Click on the "Create" button to proceed.

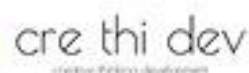
• **Step 3: Design and Configure the H5P Quiz**

1. After creating the H5P quiz activity, you'll be redirected to the H5P content editor.
2. Design the quiz by adding questions, text elements, and other interactive content.
3. Click on the "Add content" button to select different question types, such as multiple choice, fill in the blanks, true or false, etc.
4. Customize each question by entering the question text, options, correct answers, and feedback.
5. Configure additional settings for the quiz:
 - a. Specify the maximum score for the quiz.
 - b. Set passing grades and grading options.
 - c. Choose the display mode and behavior of the quiz.
 - d. Enable options like randomizing questions or shuffling answers if desired.
6. Add more questions to the quiz using the "Add content" button.
7. Preview and test the quiz using the "Preview" button.
8. Save your progress as you create and configure the quiz.

• **Step 4: Save and Display the H5P Quiz in Moodle**

1. Once you have designed and configured the H5P quiz, click on the "Save and display" button.
2. The H5P quiz will now be embedded within your Moodle course.
3. Customize the appearance and additional settings for the H5P activity as needed.
4. Click on the "Save and return to course" button.

Congratulations! You have successfully created an H5P quiz in Moodle. The quiz will now be available for your students to attempt and interact with. H5P quizzes offer various interactive question types and engaging elements that can enhance the learning experience in your Moodle courses.



Example of a gamified course including H5P Quizzes

Let's create an example of a gamified course on "Electrical Engineering Challenge" with H5P activities in Moodle. In this course, learners will participate in interactive challenges and quizzes related to electrical engineering concepts, earning points and badges along the way.

Course Overview: Course Name: Electrical Engineering Challenge Estimated Duration: 8 weeks
Gamification Elements: Points, Badges, Leaderboard

Week 1: Introduction to Electrical Engineering

- Topic 1: What is Electrical Engineering?
- Topic 2: Fundamentals of Circuits
- Topic 3: Basic Electronics

H5P Activity 1: Circuit Quiz Description: A quiz consisting of multiple-choice questions on circuit fundamentals.

H5P Activity 2: Circuit Building Challenge Description: An interactive activity where learners can virtually build circuits and troubleshoot.

Badge 1: Circuit Novice Description: Awarded to learners who complete the Week 1 activities.

Week 2: Power Systems and Energy Conversion

- Topic 1: Power Generation and Distribution
- Topic 2: Transformers and Power Electronics
- Topic 3: Electric Motors and Drives

H5P Activity 3: Power Systems Quiz Description: A quiz to test knowledge of power systems and energy conversion.

H5P Activity 4: Power Systems Simulation Description: A simulation where learners can explore power systems and their components.

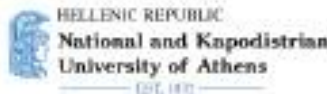
Badge 2: Power Enthusiast Description: Awarded to learners who complete the Week 2 activities.

Week 3: Electronics and Control Systems

- Topic 1: Analog and Digital Electronics
- Topic 2: Control Systems Basics
- Topic 3: Feedback Control and PID Controllers

H5P Activity 5: Electronics Challenge Description: An interactive challenge on analog and digital electronics.

H5P Activity 6: Control Systems Quiz Description: A quiz to assess understanding of control systems principles.



Badge 3: Electronics Wizard Description: Awarded to learners who complete the Week 3 activities.

Week 4: Communication and Signal Processing

- Topic 1: Communication Systems and Principles
- Topic 2: Signal Processing Techniques
- Topic 3: Digital Signal Processing

H5P Activity 7: Communication Systems Simulation Description: A simulation to explore various communication systems.

H5P Activity 8: Signal Processing Challenge Description: An interactive challenge on signal processing techniques.

Badge 4: Signal Processing Pro Description: Awarded to learners who complete the Week 4 activities.

Week 5: Microcontrollers and Embedded Systems

- Topic 1: Microcontroller Basics
- Topic 2: Embedded Systems Design
- Topic 3: Programming Microcontrollers

H5P Activity 9: Microcontroller Quiz Description: A quiz to test knowledge of microcontroller basics.

H5P Activity 10: Embedded Systems Simulation Description: A simulation to experience designing embedded systems.

Badge 5: Embedded Systems Master Description: Awarded to learners who complete the Week 5 activities.

Week 6-8: Final Project and Wrap-up

- Final Project: Design and present an electrical engineering project, applying knowledge from all the topics covered in the course.

Final Badge: Electrical Engineering Expert Description: Awarded to learners who successfully complete the final project and earn all five previous badges.

Grading and Progression:

- Learners will earn points for completing each H5P activity and quizzes.
- Badges will be awarded based on the completion of weekly activities and the final project.
- A leaderboard will display the top learners based on their total points earned.

Engagement and Motivation:

- Points and badges will motivate learners to participate actively and excel in each activity.
- The leaderboard will encourage healthy competition among learners.



- Active discussion forums and peer feedback will be encouraged to foster a collaborative learning environment.

Remember that gamification elements should be thoughtfully integrated into the course design to enhance the learning experience. H5P activities can make the course engaging and interactive, and badges and points can provide tangible recognition for learners' achievements in the field of electrical engineering.

How to create a leaderboard activity in Moodle

The "block_xp" plugin in Moodle allows you to create a gamified environment with experience points (XP) and leaderboards, where students can earn points for completing activities and see their progress relative to their peers. Here's how to set up leaderboards using the "block_xp" plugin and an example of an electrical engineering course gamified with leaderboards:

- **Step 1: Install and Enable the "block_xp" Plugin** – This step is usually done from the IT department but in case that it is not completed here is how you can proceed:
 1. Download the "block_xp" plugin package from the Moodle plugins directory (https://moodle.org/plugins/block_xp).
 2. Extract the plugin files.
 3. Upload the plugin folder to the appropriate directory on your Moodle server (e.g., **yourmoodlesite/blocks/**).
 4. Log in to your Moodle site as an administrator.
 5. Go to "Site administration" -> "Notifications" to complete the plugin installation.
 6. Once the plugin is installed, you should see the "block_xp" block listed among the available blocks in the "Add a block" dropdown.
- **Step 2: Add the "block_xp" Block to the Course**
 1. Navigate to the course where you want to add leaderboards.
 2. Turn editing on by clicking on the "Edit" button at the top right corner of the page.
 3. In the section where you want to display the leaderboard, click on the "Add a block" dropdown.
 4. Select "XP" from the list of available blocks.
- **Step 3: Configure XP Settings**
 1. Click on the gear icon (settings) in the "XP" block to configure its settings.



2. Set up the XP system by specifying the XP scale, XP for different activities, and XP decay rate (if desired).
3. Customize the appearance and visibility options of the leaderboard.
4. Save your changes.

Example of a gamified course including a Leaderboard

Course Overview: Course Name: Electrical Engineering Quest Estimated Duration: 12 weeks
Gamification Elements: Experience Points (XP), Leaderboard

Week 1: Introduction to Electrical Engineering

- Topic 1: What is Electrical Engineering?
- Topic 2: Fundamentals of Circuits

Activities:

- Quiz 1: Electrical Engineering Basics Quiz (20 XP)
- Assignment 1: Reflecting on Electrical Engineering (30 XP)

Week 2: Power Systems and Energy Conversion

- Topic 1: Power Generation and Distribution
- Topic 2: Transformers and Power Electronics

Activities:

- Quiz 2: Power Systems Quiz (25 XP)
- Project 1: Designing a Power Distribution System (40 XP)

Week 3: Electronics and Control Systems

- Topic 1: Analog and Digital Electronics
- Topic 2: Control Systems Basics

Activities:

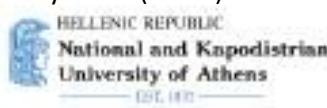
- Quiz 3: Electronics Quiz (30 XP)
- Lab 1: Control Systems Simulation (35 XP)

Week 4: Communication and Signal Processing

- Topic 1: Communication Systems and Principles
- Topic 2: Signal Processing Techniques

Activities:

- Quiz 4: Signal Processing Quiz (25 XP)
- Assignment 2: Analyzing Communication Systems (40 XP)



Week 5: Microcontrollers and Embedded Systems

- Topic 1: Microcontroller Basics
- Topic 2: Embedded Systems Design

Activities:

- Quiz 5: Microcontroller Quiz (30 XP)
- Project 2: Building an Embedded System (45 XP)

Week 6-11: Final Project - Electrical Engineering Challenge

- Final Project: Design and implement an electrical engineering project integrating knowledge from all the course topics.

Activity:

- Final Project: Electrical Engineering Challenge (100 XP)

Week 12: Conclusion and Reflection

- Activity: Course Reflection (20 XP)

Leaderboard:

- The leaderboard displays the XP earned by each student based on completed activities.
- XP points are updated in real-time as students complete activities and earn points.
- Students can see their ranking and compare their progress with their peers.

Grading and Progression:

- Students earn XP points for completing quizzes, assignments, labs, and projects throughout the course.
- Badges and certificates can be awarded to students based on XP milestones achieved.

Engagement and Motivation:

- The XP-based leaderboard creates healthy competition among students, motivating them to actively participate in the course and complete activities.
- Students can monitor their progress on the leaderboard, which helps them set goals and strive for higher achievements.

By gamifying the Electrical Engineering Quest course with the "block_xp" plugin in Moodle, learners are encouraged to actively engage with the course content, collaborate with peers, and track their progress as they explore various topics in electrical engineering. The leaderboard fosters a sense of achievement and promotes continuous learning throughout the course.

How to create a stash activity in Moodle

- **Step 1: Install and Enable the Plugin**

1. Before you start, make sure the "block_stash" plugin is installed and enabled on your Moodle site. If not, you can find and install it from the Moodle plugin directory (https://moodle.org/plugins/block_stash).

- **Step 2: Add the "block_stash" Block to the Course**

1. Once the plugin is installed and enabled, you need to add the "block_stash" block to the course where you want to create the activity. To do this:
 - Go to the course page and turn editing on (click the "Turn editing on" button).
 - From the "Add a block" block, select "Stash" to add the "block_stash" block to the course page.

- **Step 3: Create the Activity**

1. With the "block_stash" block added to the course, you can now create the activity that contains hidden images for your learners to discover.
2. Edit or create a new wiki page, resource, or any other content activity that you want to use for the gamified activity.

- **Step 4: Add Hidden Images**

1. Inside the wiki page or other content activity, you can add hidden images by using the "Insert Image" option from the content editor.
2. Upload the images you want to hide or use images already available on your Moodle site.
3. Instead of inserting the image directly into the content, use the "Insert Image" dialog to set the image to be "hidden" using the "Stash It" option provided by the "block_stash" plugin.

- **Step 5: Configure Stash Settings (Optional)**

1. The "block_stash" plugin allows you to configure some settings for the hidden images. For example, you can set a maximum number of times an image can be stashed before it's considered "collected," and you can enable image trading between learners.
2. To access the "block_stash" settings, click on the gear icon on the "block_stash" block and choose "Stash settings."

- **Step 6: Save and Review**

- Once you've added the hidden images and configured the settings (if needed), save the changes to the wiki page or other content activity.
- Review the content to ensure that the hidden images are properly inserted with the "Stash It" option.

- **Step 7: Test the Activity**

- As the teacher or course creator, you can test the activity to make sure the hidden images work as intended. Access the course as a student to experience the gamified activity from their perspective.

With these steps, you have successfully created an activity with the "block_stash" plugin in Moodle. Learners in the course will now be able to explore the content, discover hidden images, and collect them using the "block_stash" block. The gamified activity will increase learner engagement and encourage them to interact more actively with the course material.

Example of a gamified course including Stash plugin

Let's create an example of a gamified course on "Electrical Engineering Adventure" specialized in electrical engineering using the Stash plugin in Moodle. In this course, learners will embark on an interactive journey through various electrical engineering topics, complete challenges, and collect hidden images scatter through the activities of the course.

Course Overview: Course Name: Electrical Engineering Quest Estimated Duration: 12 weeks
Gamification Elements: Badges, Hidden Images (using block_stash plugin)

Week 1: Introduction to Electrical Engineering

- Wiki Activity: Ancient Engineering Manuscript

- Explore the ancient wiki on electrical engineering to unveil its hidden wisdom

Badge 1: Electrical Engineering Novice Description: Awarded to learners who decipher the secrets hidden within the Ancient Engineering Manuscript.

Week 2: Power Systems and Energy Conversion

- Wiki Activity: Power Grid Expedition

- Embark on a wiki quest to discover hidden symbols scattered within the power grid diagrams

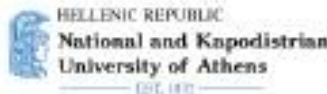
Badge 2: Power Systems Explorer Description: Awarded to learners who navigate the intricacies of the Power Grid Expedition and uncover its hidden symbols.

Week 3: Electronics and Control Systems

- Wiki Activity: Circuitry Enigma

- Solve the enigmatic riddles concealed in the circuits to unlock their hidden messages

Badge 3: Electronics Trailblazer Description: Awarded to learners who decipher the Circuitry Enigma and unravel the concealed messages.



Week 4: Communication and Signal Processing

- Wiki Activity: Cryptic Communication
 - Decode the cryptic messages hidden within the communication systems to uncover their true meaning

Badge 4: Signal Processing Adventurer Description: Awarded to learners who master the art of Cryptic Communication and reveal the concealed messages.

Week 5: Microcontrollers and Embedded Systems

- Wiki Activity: Micro-relic Discovery
 - Embark on a wiki quest to find and collect the ancient micro-relics hidden within embedded systems

Badge 5: Microcontroller Champion Description: Awarded to learners who discover and collect the elusive micro-relics on their quest.

Week 6-9: Final Project - Electrical Engineering Challenge

- Final Project: Arcane Engineering Conundrum
 - Confront the Arcane Engineering Conundrum, an intricate wiki puzzle that integrates all your knowledge

Badge 6: Electrical Engineering Hero Description: Awarded to learners who demonstrate exceptional skills in solving the Arcane Engineering Conundrum.

Week 10: Course Reflection

- Wiki Activity: Journey's End Reflection
 - Reflect on your extraordinary journey and share your insights with your fellow adventurers

Hidden Images using "block_stash" Plugin:

- Throughout the course content, including wikis and other resources, teachers have hidden images that symbolize the achievements of each wiki activity.
- Learners are encouraged to actively read the content to discover these hidden images and "stash" them in their collection.

Image Trading and Engagement:

- Learners can trade images with their peers to complete sets, fostering collaboration and engagement within the course.

Benefits of "block_stash" Plugin:



1. Increased Engagement: The "block_stash" plugin motivates learners to actively explore the course content in search of hidden images, making their learning experience more interactive and enjoyable.
2. Collaboration and Community Building: Learners can collaborate with others to trade images, fostering a sense of community and excitement in the learning process.
3. Incentive to Review Material: Learners are motivated to review course content multiple times to discover hidden images, reinforcing their understanding of electrical engineering concepts.

By incorporating the "block_stash" plugin into the "Electrical Engineering Quest" gamified course in Moodle, learners are encouraged to actively engage with the course content, demonstrate their understanding, and experience a fun and rewarding learning journey in electrical engineering. The hidden images and image trading feature create an additional layer of gamification, making the course more interactive and enjoyable for learners as they decipher riddles, unlock symbols, and uncover the secrets hidden within the electrical engineering quest.

Combining Active Presenter and SCORM Package in developing gamified courses

Combining ActivePresenter with the SCORM package in Moodle can be an effective way to develop a gamified electrical engineering course. ActivePresenter is a powerful e-learning authoring tool that allows you to create interactive and engaging content, while SCORM (Sharable Content Object Reference Model) is a standard for packaging and delivering e-learning content. Here's a step-by-step guide to combining ActivePresenter with the SCORM package in Moodle to develop your gamified electrical engineering course:

- **Step 1: Install ActivePresenter**

1. Download and install ActivePresenter on your computer. ActivePresenter offers a free version that provides basic features suitable for e-learning content creation.

- **Step 2: Create Your Interactive Course in ActivePresenter**

1. Open ActivePresenter and start a new project.
2. Design your course content using slides, audio, video, images, quizzes, simulations, and interactive elements.
3. Incorporate gamification elements such as badges, points, and leaderboards to enhance engagement.
4. Organize your content into logical sections, making it easy for learners to navigate.



- **Step 3: Export Your Course as SCORM Package**

1. Once your course is complete, export it as a SCORM package.
2. In ActivePresenter, go to the "Project" tab and select "Export" from the menu.
3. Choose the "SCORM" option in the Export dialog box.
4. Configure SCORM settings, such as the course name, version, and other metadata.
5. Select the appropriate SCORM version (SCORM 1.2 or SCORM 2004) based on your Moodle version and requirements.
6. Click "Export" to generate the SCORM package (.zip file).

- **Step 4: Upload SCORM Package to Moodle**

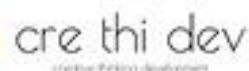
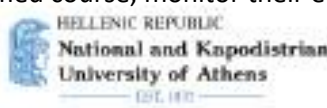
1. Log in to your Moodle site as an administrator.
2. Create a new course or open an existing course where you want to add your gamified electrical engineering content.
3. Turn editing on in the course.
4. Click on "Add an activity or resource" in the section where you want to add the content.
5. Select "SCORM package" from the list of activities and click "Add."
6. In the SCORM package settings, give your activity a name and description.
7. Upload the SCORM package (.zip file) exported from ActivePresenter.
8. Configure other settings, such as appearance, grade options, and tracking settings.
9. Save and display the SCORM activity.

- **Step 5: Test Your Gamified Course**

1. As a student or testing user, access the SCORM activity in the course.
2. Complete the gamified electrical engineering course by navigating through the content and interacting with the elements.
3. Ensure that the gamification elements, quizzes, and interactions work as intended.
4. Verify that the SCORM package properly tracks learner progress and sends data to the Moodle gradebook.

- **Step 6: Monitor Learner Progress and Engagement**

1. As learners progress through the gamified course, monitor their engagement and achievements.



2. Use Moodle's gradebook and reporting features to track learner performance and completion rates.
3. Analyze data from the gamification elements to identify areas for improvement and optimize the course for better learner engagement.

By combining ActivePresenter with the SCORM package in Moodle, you can create an interactive and gamified course that engages learners and provides them with an effective learning experience. The integration of ActivePresenter's multimedia capabilities with Moodle's tracking and reporting features allows for a comprehensive and engaging educational journey for your learners.

